



APG'S PLOT TO FIELD PROGRAM SERVES AS A LIVING LAB BRINGING SCIENCE TO THE FARM



Seeding Meadow peas at Plot to Field's Peace River site in 2018.

Traditionally, small plot research is often conducted in small, uniform experimental areas that reduce the anomalies and account for true and repeatable differences among experimental treatments. However, on-farm field scale research allows researchers to target “real world fields” with real equipment and practices that are often integral to the farm. Hence, farm-scale research trials serve the purpose of providing fact-based answers to farming’s challenging questions for which no previous research exists.

The Plot to Field initiative is a five-year program developed by Alberta Pulse Growers (APG), which is focused on moving small-plot

research toward applicability on an individual, unique farm basis. To capture data from across the province, 10 cooperators were selected to represent all the pulse growing zones within Alberta. This allows farm-scale data analysis in several agro-climatic zones. The development and successful implementation of the Plot to Field program relies on a diverse team including scientists, agronomists and farmers. With this team, APG enjoyed two successful years and completed one trial looking at the relationship between seeding rate and yield of yellow peas across soil zones.

Plot to Field provides a unique opportunity to serve as a living

lab for scientists to layer research questions on top of each other. The living lab concept, essentially research that happens in situ (in this case on an actual farm with actual conditions, equipment, etc.) is becoming a growing movement in several scientific disciplines. Living labs provide many scientists access to farms simultaneously to look at specific details. This allows entomologists, soil fertility specialists, agronomists, plant breeders and physiologists to all work in the same space on their own independent research questions. For APG, the current Plot to Field program is host to four research questions led by three different scientists at two different research institutions.

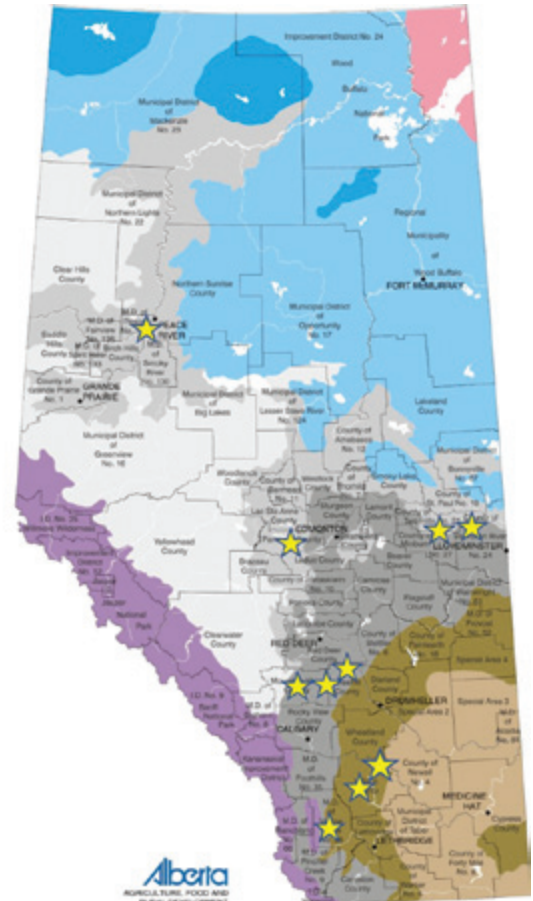
The actual mechanics of accomplishing such a program relies heavily on clear protocols and communication. All team members meet annually to review the year and make required tweaks to the system. Agronomists are in weekly contact with staff and scientists throughout the planting and data collection seasons. As with any research, there are always surprises and challenges. The secret is to build in a sufficient buffer and plan for as many “what ifs” as possible.

Some of the challenges faced in the second year included abiotic stresses such as drought, heat and hail and flying grain bins. All anomalies are carefully documented, and adjustments are made to ensure that data collection is successful and can be analyzed statistically.

For the completed trial, APG has initial data trends on the difference seeding rate has on harvested yield across four soil zones, though statistical analysis remains to be conducted. Additionally, protein and seed size analysis will demonstrate how seeding rate affects the yield and protein content at each trial location. This provides a linkage to companies looking to incorporate peas with specific protein quality into their product lines.

APG’s Plot to Field initiative is committed to strengthen the overall best management practices for growing the pulse industry and maintaining its vitality. Specifically, it aims to move small plot research towards broader farm level applicability (more relevant), to provide a protocol that allows farmers on an individual farm basis to ask questions and find reliable answers, as well as provide realistic information on cost of inputs and economic benefits. APG’s board and staff are excited at the potential of this living lab program, and its impact is just starting to be realized.

- Fort Vermilion
- Stony Plain
- Vermilion
- Derwent
- Linden
- Trochu
- Midway
- Mossleigh
- Lomond
- Claresholm



Summary of APG Plot to Field sites and soil zones listed by closest town.



Root nodulation score is one of the many data points assessed as part of APG’s living lab field trials. For more information on how to assess root nodulation in your own field connect with us @APGresearch @APGextension and watch our app for a podcast from the field!